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Edited by WILLIAM HUNTING, F.R.C.V.S.

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THE A.V.D. AND COLONEL LONG.

Mr. E. R. Edwards contributes a long letter on the subject of the Veterinary Department in South Africa and contradicts some of the assertions made by others. He refers to letters sent by other correspondents rather harshly, saying "they cowardly hide behind *noms de plume*." Now there may be other reasons than cowardice for not signing a letter, and if personal attacks on individuals are not made we see no harm in an anonymous contribution to a subject of great interest. Of course no letter is published unless the writer supplies us with his name as evidence of *bona fides*, and no letter has been published save from men who saw with their own eyes in South Africa.

We accept Mr. Edwards' statements as true, but his experience was apparently limited to De Aar and Kimberley, and ceased before the appointment of Colonel Long. Mr. Edwards says that a statement of ours "No one paid any attention to the requests of a veterinary officer. . . . they were ignored" is absolutely incorrect. If so, we are very sorry we were misled into such a statement. The information was given to us by a gentleman whose experience was greater than that of Mr. Edwards.

In a letter just to hand but not for publication the writer says, "In our hospital we laboured under great disadvantages in that we had not a single stable, were somewhat crowded, a large proportion of the horses had to be fed from nosebags, and we had next to no permanent staff. We had to get along mostly with "convalescents," some of them infantry men just over enteric, This scratch staff was inspected weekly by medical officers and as soon as any were fit they were taken from us . . . . . Matters mended somewhat after Col. Long came, but even he could not make officers commanding units let us have men . . . . On the appointment of Col. Long the need for any great urgency in any movement was hardly ever present, and it was represented by the various veterinary officers that unfit horses were being dragged about the country by column commanders. Colonel Long was given authority to inspect columns (the commanders being in most cases junior to him) and to say what horses were unfit and should be sent to sick depôts. If such powers had been delegated to senior veterinary officers it would undoubtedly have caused friction. The veterinary officer is not to command but only to advise, and his advice is often not attended to."

We know nothing either of Army matters or South Africa. We are glad to learn, and we publish letters from correspondents with a belief that they are at least sent with honest intention and contain the truth so far as the writer knows.

ABSTRACTS FROM FOREIGN JOURNALS.

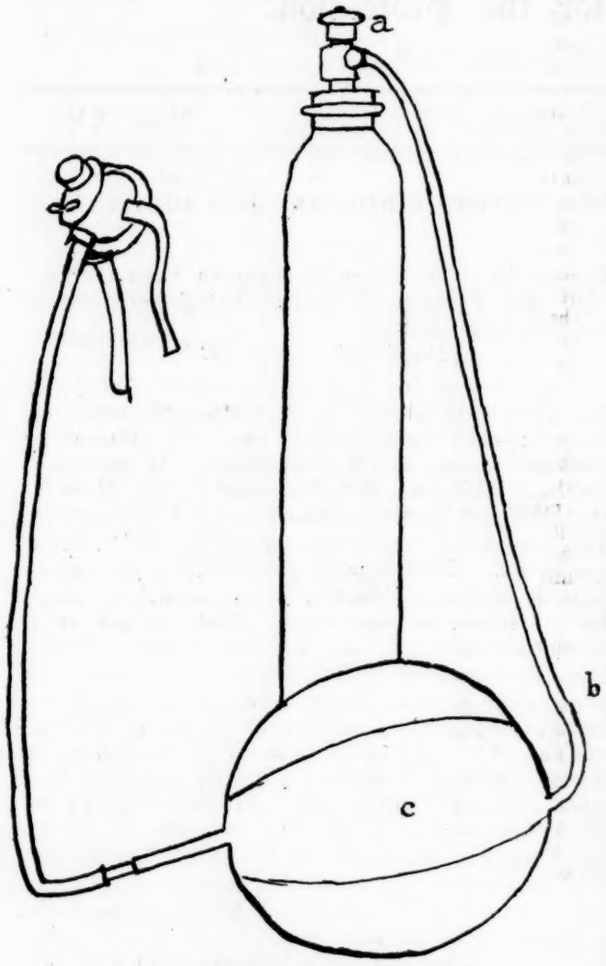
TREATMENT OF RESPIRATORY DISEASES WITH OXYGEN.

By Dr. TOEPPER, of Berlin, Veterinary Surgeon to the Royal stables.

(Continued from p. 526.)

The following directions (of the manufacturer) and illustration will make clear the method of employing oxygen:—The manufacturer used an indiarubber mask constructed by Dr. Kantorowicz. As the manufacture of this mask is tedious and costly, Herr H. Hauptner, of Berlin, replaced it by a leather one. This was then improved after a pattern of Dr. Kantorowicz's. When supplying the oxygen the manufacturer would also deliver, if requested, the mask for the horse, as represented. This consists of a leather cap which is fastened to the halter of the horse by means of leather straps and buckles. It covers both nostrils, for the reception of which the mask is hollowed out and is cut off at the cleft of the mouth. The application of the oxygen inhalations was first made so that the concentrated oxygen was conducted directly from the steel flasks through an indiarubber tube to the nostrils. In order to regulate the pressure a manometer was inserted. The patients then breathed concentrated oxygen twice daily from 10 to 15 minutes in a continued 1-10th atmospheric pressure. That by this means much oxygen must be lost is evident. A flask holding 1000 litres of oxygen streaming out under 1-10th atmospheric pressure would suffice for 10 applications, so that in every minute 10 litres of oxygen were used. In order to diminish this excessive consumption of oxygen an indiarubber sac was inserted between the manometer and the nasal openings of the horse, which can be closed by two vulcanite stopcocks leading to and from the sac. The inlet being open and the other closed the indiarubber sac becomes filled with oxygen from the cylinder by turning on the hand screw. When the sac is filled the vulcanite inlet cock is closed. Then one puts the mask on the horse. A man takes the indiarubber sac under his arm and exerts pressure on the sac at every inspiration of the horse. The insertion of a manometer between the steel cylinder and the indiarubber sac is recommended, but is not absolutely necessary. If no manometer is inserted the outlet from the steel cylinder must be carefully controlled by means of the screw, since excessive pressure may cause a crack in the tube or a rent in the sac. Firm union of the tube at the cylinder and mask is important. The use of the sac effects a great saving in oxygen. An oxygen cylinder filled with 1000 litres of oxygen will suffice for one horse for eight days if oxygen is in-

haled twice daily for ten minutes at a time. As a rule during this time the fever accompanying chest affections is on the decline.



a—Handscrew: b—Vulcanite cock:
c—India-rubber ball or sac 20 litres capacity.

Leather Mask.

Horses take oxygen inhalations very well, and are very quiet during their application. Even horses touchy about the head, which resist the application of the mask for the first time, later on cause no trouble. In many cases inhalations of oxygen appear at first to cause irritation of the mucous membranes. It may be noticed that after inhalations of from one to two minutes some horses commence to cough. Generally two or three violent spasmodic coughs and then ceases. It almost invariably occurs only in the first inhalation. Only in one case did a horse cough each time for the first five inhalations. After taking away the mask one often sees a clear transparent watery fluid secreted in drops on the nasal mucous membrane. At the same time, after the inhalations it will be noticed that the nostrils are much more pronouncedly expanded in inspiration than before inhalation of the oxygen occurred. This symptom, however, disappears very soon.—Ex. *Berliner Thierärzt Woch.*

G. M.

(To be continued.)

LINCOLNSHIRE VETERINARY MEDICAL ASSOCIATION.

The twenty-first annual meeting was held at the Angel Hotel, Grantham, on Thursday, February the 12th. The President, Mr. E. C. Russell, of Grantham, presided, and there were present Messrs. Mason, Leeds; R. W. Clarke, Wragby; J. Smith, Huntingdon; J. Mackinder, Peterboro', F. L. Gooch, Stamford; Gresswell, Peterboro'; H. C. Reeks, Spalding; T. W. Turner, Sleaford; and other gentlemen.

The minutes of the last meeting having been read by the Secretary, they were confirmed and ordered to be signed by the Chairman.

Letters and telegrams from Profs. Pritchard and Penberthy, and Messrs. Freer, Hartley, Lang and Lennox, who found it impossible to be present, were read by the Secretary.

The SECRETARY reported that he had, according to his instructions at the last meeting, forwarded to the various associations a copy of the resolution passed, dealing with the question of the position of the Army Veterinary Officers. The South Durham Association had replied stating that they had passed a similar resolution which they had forwarded to the Secretary of the R.C.V.S., the Secretary for War, and their own Members of Parliament, asking for their support when the matter should come before the House of Commons.

Mr. GIBSON, M.R.C.V.S., of Oakham, had been proposed as a member of the Association, and was now ballotted for and carried unanimously.

ELECTION OF OFFICERS.

Mr. GOOCH said he had the pleasure of bringing a name before the Association, as their president for the coming year. Mr. Reeks, of Spalding, was a gentleman who had done the Association good service on several occasions, and who fully deserved the highest honour the Association could pay him.

Mr. J. SMITH said he had great pleasure in seconding Mr. Reeks' name for election. He was a gentleman who often came forward to help them and read them such good papers, from which they could all learn something. He hoped he would accept the position, and as he took such an interest in their Society he would be a worthy successor to their present president Mr. Russell.

Mr. MACKINDER supported the proposition, remarking that Mr. Reeks was a very worthy son of a worthy father. The proposition having been carried with acclamation,

Mr. REEKS said he was obliged to them for the great honour they had conferred upon him, and it would be his best endeavour to fill the position satisfactorily, but

if he was lacking in anything he hoped Mr. Russell and the members would give him the assistance he needed.

Mr. Russell's name was then placed as one of the three vice-presidents, the Secretary explaining that it was their custom for the last three presidents to remain vice-presidents.

The PRESIDENT said the next business was the election of secretary, and he had great pleasure in proposing the re-election of Mr. Turner. He was sure they could not have a better man; he had worked hard for the Society. The duties of the Secretary of a Society like theirs caused a great deal of trouble and occupied a lot of time, which Mr. Turner had devoted to it ungrudgingly.

Mr. GRESSWELL, in seconding, said Mr. Turner was a gentleman who gave them great help before he was secretary, but since, he had worked hard for the good of the Society. He was now getting used to the work, and they could not do better than keep him in the position.

Mr. TURNER, in agreeing to retain the office, said he was pleased to do what he could for the Society, but he should be more pleased if the members would turn up in greater numbers at their meetings. He often sent each member the usual notice of the meetings and then followed that up by sending them a private letter or postcard from himself asking them to be present, but he was sorry to say some of them never turned up at all nor even took the trouble to reply. He was sure that the meetings could not but be a benefit to the members whose practice was in the country, where they did not often see a brother veterinary surgeon or have any professional intercourse except through the columns of their journals.

Mr. RUDKIN proposed a hearty vote of thanks to Mr. Russell for his services as President for the past year, and to Mr Turner, their secretary.

Mr. R. W. CLARKE seconded, and Mr. Mackinder supported.

Mr. RUSSELL, as treasurer, then presented his annual balance sheet, which showed that the receipts for the year had been £11 12s. 6d., and the expenditure £15 7s. 4d., which had somewhat reduced their balance at the bank. They had had rather an expensive year, but he was sorry to say the subscriptions had not come in as they ought to have done. Several of the members failed either to attend the meetings or to pay their subscriptions. He had written personally soliciting payment, but in several cases he had received neither letter nor money. He did not know what more he could do. If the subscriptions had all been paid they should have had an income of £23 1s. 6d. In answer to a member, Mr. Russell said that one veterinary surgeon who had been elected in 1899 had never paid either his entrance fee or any subscription. One member owed the Society £2 10s. 6d, and another £3. After some discussion it was resolved that the names of veterinary surgeons neglecting to pay their subscriptions should be erased from the books of the Society.

NEW MEMBERS.

Mr. G. H. POLES, M.R.C.V.S., of Thorney, and Mr. R. W. KNOWLES, M.R.C.V.S., of Wisbeach, were nominated as members of the Association, and ordered to be balloted for at the next meeting, to be held at Peterborough.

HON. ASSOCIATES.

Mr. GRESSWELL proposed that Mr. A. W. Mason, of Leeds, and Col. J. A. Nunn should be elected honorary associates of the Society. This was supported by Mr. Reeks and Mr. Rudkin, and carried unanimously.

Mr. MASON said he did not anticipate such an honour being offered him, but he felt he could do no other than accept it. Although he did not live in Lincolnshire he had always taken an interest in their Society, and he should be very glad if he could do anything for their Association.

In answer to a copy of the resolution forwarded to Colonel J. A. Nunn, that gentleman intimated the pleasure he felt in being elected as an honorary associate of the Lincolnshire Society.

Mr. RUSSELL was heartily thanked for his services as treasurer, and was unanimously re-elected to continue that position.

Mr. RUSSELL thanked them, and said he was only sorry that some of the members did not allow him to present a better balance sheet.

GASTRIC TYMPANY IN THE HORSE: ITS DIAGNOSIS AND TREATMENT.

By H. CAULTON REEKS, F.R.C.V.S., Spalding.

So long as colic exists in the horse no veterinarian need be at a loss for a suitable and interesting subject to bring before his fellow practitioners for discussion. It crops up in our daily round of cases in so many and perplexing variations that it is bound to attract a very large share of the veterinary surgeon's attention. For me it has an almost enthralling interest.

It seems that there is yet so much to be learned concerning it that a wide field remains for the acquiring of further knowledge, the saving of many a valuable equine life; and though our researches into the mysteries surrounding it may not possess that element of extreme fascination that appears to chain the devotees of bacteriology and chemistry to their investigations, we may still find in colic a subject which will provide for us many a knotty little problem needing for its solution a great amount of concentrated thought and an exceeding amount of attendance on individual cases.

In justice to those who have given us original matter bearing on these disorders it is only fair to mention that their investigations and observations are often made under circumstances and amidst surroundings vastly different to those which encompass the worker in a well equipped laboratory, circumstances calculated to damp the ardour of all but the most enthusiastic. A piece of original information or a new line of thought, which when reduced to the medium of cold type, or confined within the limits of a simple reading sentence sounds meagre enough, has perhaps been arrived at only by hours of anxious watching in a cold and draughty stable, or by the careful tabulation of a string of cases collected miles away from home, in all weathers, and at all times. Or it may be that the post-mortem, upon which so much depends to clear up doubtful points and help in the formulating of a diagnosis for future cases, has had to be undertaken during a heavy pressure of other work, and at a direct monetary loss to the practitioner. All credit, then, to those who stoop—if stoop it may be termed, to the investigation of the more common ailments to which our patients are liable.

Among all the varying types of colic, with their distracting array of manifestations, there is none more intensely interesting, and I might add gravely dangerous, than the one I have chosen for the subject of my remarks to day.

It is by no means a rare form of the disorder, and yet appears to have been but little noticed in veterinary literature. Strange to say, though so seldom described, what accounts are to hand are extremely exact, and form most interesting reading to the practitioner with one or two cases recently on his books. Among the most interesting may be mentioned the very excellent account by Percivall, in which a brigade of horses had been allowed to feed in a field of growing wheat during the march of the British army from Waterloo to Paris in 1815 (*Percivall's Hippopathology.*) Another exact description is given by a Mr. Henry Thompson, of

Cawnpore (*The Veterinary Journal*, Vol. III, p. 259.) Other cases of acute gastric tympany are related by Vet.-Lieut.-Col. Smith (Proceedings of the 5th General Meeting of the National Veterinary Medical Association, p. 79), Messrs. Alfred Broad (*The Veterinary Journal*, Vol. II, p. 174), E. Wallis Hoare (*The Veterinarian*, Vol. LXIX, p 794), John Young, (*The Veterinarian*, Vol. XLVIII, p. 593), R. Shaw Craig, (*The Veterinary Record*, Vol. IX, p. 214.

I do not, however, intend to weary you with a long list of collected reports. Instead, I will hurry along with a description of the complaint, dwelling only over such points as may be of importance, or in some way debateable.

Definition.—We may describe this condition as one in which the stomach is abnormally distended with gas, the result of fermentation of its contents, or the introduction of air from without.

The latter half of the definition refers to that condition caused by the sucking in of wind whilst crib-biting. Owing to its comparative unimportance I shall not again allude to it.

The other condition, in which the tympany is consequent upon some abnormality of the stomach itself, or, as is more frequent, its contents, is the one that offers for our consideration an alarming set of symptoms, and calls for early and exact treatment if a favourable issue is to be expected.

Causes. Like most other forms of colic its causes will be found to turn largely on dietetic errors. Prominent among them will come an inordinate allowance of young and succulent herbage—particularly clover, growing corn, lucerne, or vetches; or it may arise from the too hasty bolting of only a moderate quantity. A large quantity of mixed ground corn also appears likely to bring about an attack, especially, as is often the case, if one of the ingredients should be wheat or barley. In my own district that practice has become a very general one during the last few months, owing largely to the increase in the price of maize. Wheat, ground or steeped, has been made to take its place. That brings me to a consideration of soaked and boiled foods. They appear particularly unsuited to the horse, and are often the cause of colic troubles, more especially of the one we are dealing with. Such foods, unless the men are well superintended and the supplies kept fresh, will turn sour and inevitably give rise to fermentation when eaten.

Again, who has not noticed the acute attacks of this disorder which crop up every spring when the animals are turned, fresh from a winter's stabling, on to a field of young spring grass. Those who live in marshy districts also know full well the dangers of a meal of the succulent herbage flourishing by the water's edge; or have seen cases arise from the ingestion of a quantity of fermenting, partly dried dykeings. New oat straw, new oats, greedy feeding or imperfect mastication, and abnormalities of the stomach, such as the presence of large numbers of bots all take their turn in the causation.

Another very frequent cause of this trouble, and one that gives rise to it in an alarming form, is the putting to work immediately after a heavy meal of a food likely to bring it about.

Seeing that these various causes depend for their effects upon such a simple condition as the evolution of gas from the stomach contents, one might well ask, "Why should this tympanitic stomach be so highly dangerous? Why should it be classed as "alarming"? The answer will be found in the anatomy of the stomach itself, namely, in the arrangement of the fibres at its cardiac end, and also in the build of the first portion of the duodenum. It is an arrangement sometimes effectually preventing the exit from the stomach of the generating gases. The explanation is this. Taking the cardiac or œsophageal opening first we find:

(1) That this end of the œsophagus is narrow, its fibres thickened and contracted, that it enters the stomach somewhat obliquely (an entrance comparable to that of the ureters into the bladder), and that there is a peculiar arrangement of the folds of mucous membrane lining it partially blocking its lumen.

(2) That the fibres of the stomach walls form a well-marked sphincter, termed, from its position, the cardiac sphincter. (See figures 2 and 3.)

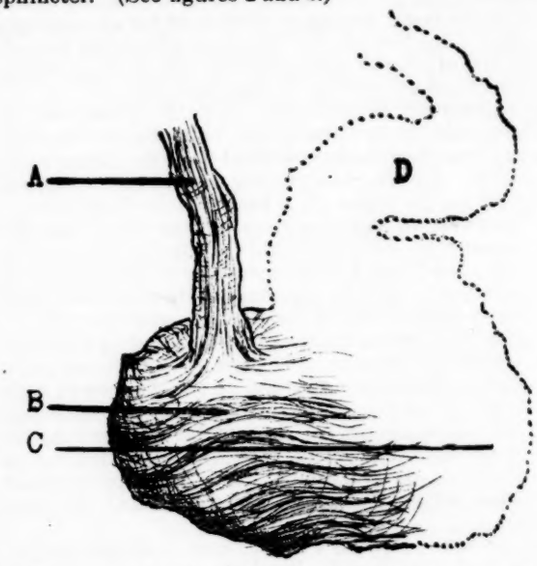


Fig. 1.—Superficial or External Muscular Coat of Stomach.

Evidently a continuation of the longitudinal muscular layer of the œsophagus. Radiates obliquely over the left sac, leaving the right sac (indicated by the dotted lines) uncovered. A. Œsophagus. B. Left Sac. C. Right Sac. D. Duodenal S-Trap.

Muscular Coat of Stomach.

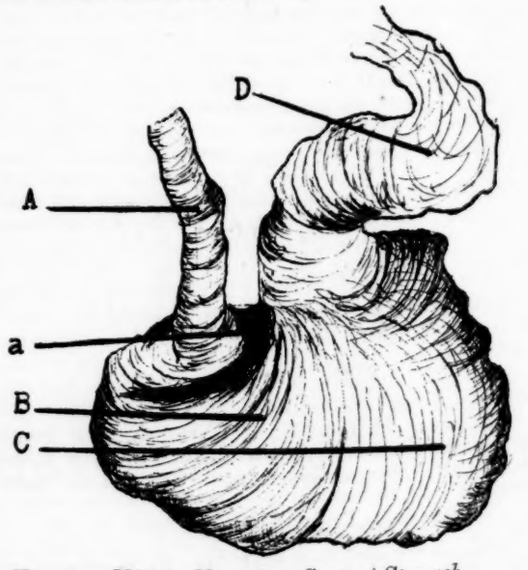


Fig. 2.—Middle Muscular Coat of Stomach.

A continuation of the circular coat of the œsophagus, covering in a circular manner both sacs.

(*a*) Circular fibres (in one position intentionally lined more blackly than their neighbours. There is no aggregation of these fibres). These, acting in conjunction with fibres (*b*) in Fig. 3 form a powerful sphincter. A. Œsophagus. B. Left Sac. C. Right Sac. D. Duodenal S-Trap.

Perhaps a fuller explanation of this sphincter will be acceptable. The arrangement of the fibres that go to its formation is so striking that I may better illustrate it by the following diagrams.

Reference to figure 3 shows that we have in the deep muscular coat of the stomach a peculiar cravat-shaped aggregation of fibres clasping the lower end of the œsophagus. You will notice that it leaves the right side of the œsophagus free.

A glance at Fig. 2, however, shows that the disposition of the circular fibres is such that, when contracting, pressure will be brought by *them* to bear on the *right* side of the œsophagus, at a point immediately opposite the cravat-shaped fibres before mentioned.

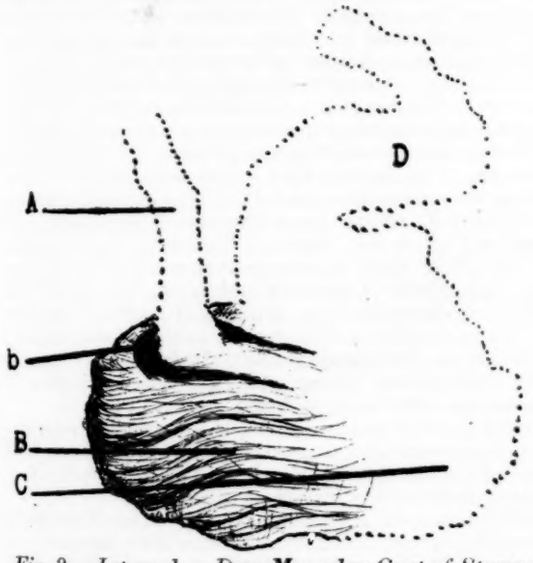


Fig. 3.—Internal or Deep Muscular Coat of Stomach.

Like to the superficial, this radiates in an oblique manner over the left sac only.
(*b*) A peculiar aggregation of fibres clasping the cardiac end of the œsophagus in the manner that a cravat does the neck. Acting with the fibres (*a*) in Fig. 2 they form the cardiac sphincter of the stomach. A. Œsophagus. B. Left Sac. C. Right Sac. D. Duodenal S-Trap.

We have, then, two opposite sets of fibres which grip the lower end of the œsophagus as in the opposing jaws of a vice. That tube is compressed from left to right by the fibres of the deep coat, and from right to left by the fibres of the middle coat. The sphincter, you will thus see, is an extremely powerful one, explaining that gases formed in abnormal quantity inside the stomach gain no exit by the œsophagus.

This sphincter is constantly in operation. All that is passed into the horse's stomach, and all that is formed from the in going material, must gain exit by the pylorus —the only outlet.

Let us examine this outlet. We find there also a sphincter, but a weak one. The build of the duodenum, however, again holds our attention. Its first portion is distinctly S shaped, happily likened by Vet.-Lt.-Colonel Smith to the S shaped trap of ordinary drain pipes.

This S shaped piece of intestine is held in that position by ligamentous attachments, and, if careful examination is made of this portion of bowel while *in situ*, it is easy to understand that if the stomach be distended it may easily press between itself and a distended coil of large intestine this S shaped portion of bowel, completely obliterating the latter's lumen.

We thus find two causes sometimes co-operating to tightly close both ends of the stomach, and the question as to why the presence of fermenting and gas-forming foods should be so highly dangerous receives an adequate answer—the gas cannot escape. Every minute sees its volume increase, every minute adds to the distension of the stomach and the agony of the animal, and every minute's delay in the commencement of a rational treatment is fraught with danger.

Symptoms.—The description of the symptoms and diagnosis I intend taking bodily from a small book on colic I have recently published. If any of you here have read it I apologise for taking you a second time over the same ground.

In most cases the symptoms will be well pronounced before the arrival of the veterinary surgeon. Nevertheless he must remember that the outset, even of a simple attack, may be comparatively simple. The horse is seized with colic pains soon after the offending feed. The pulse at first is but little quickened, and the respirations are not increased to any marked extent. As a consequence the animal is treated in the usual way by the attendants before calling in skilled advice.

During this time the patient had been gradually getting worse, the pains have become more severe, and the tympany more marked. The owner eventually becomes alarmed and the veterinarian is sent for.

The symptoms now presented are of an excessively alarming nature. The unfortunate animal is in a bath of perspiration, his countenance is suggestive of the most agonising torture, and staggering blindly about he is a danger to himself and those about him. His pains have rendered him unmanageable, and with the greatest difficulty can he be kept upon his legs. That is one state of affairs that meets the eye of the surgeon.

In other cases a totally different set of symptoms will be presented for his inspection. Instead of madly flinging himself down, only to rise and rush in frenzy round his box, the poor brute stands in patient agony. He appears now to have some God-given instinct that violence will only render worse his well-nigh hopeless case. He occasionally makes quiet crouching attempts to lie, but stands for the most part quiet. The distressed nature of his respirations, however, and the pinched, haggard expression of his countenance reveal the intensity of his suffering.

In both cases examination reveals an alarming state of the pulse and respirations. The pulse, weak in character, is found to be hammering frantically at a rate of 100 to 120 beats a minute, and the breathing—of a painful, gasping, see saw character—is accelerated from the normal to as many at 140 to 150.

Oftentimes the abdomen is found to be tensely tympanitic, rarely it will be found to be about the normal, no noticeable distension, and peristalsis evident on auscultation. In those cases where abdominal distension is marked, rectal exploration will sometimes reveal coils of distended intestines occupying the pelvis, and the operator's arm is met with painful straining efforts on the part of the patient. At times the rectum is found to contain a few hard lumps.

Distension of the abdomen, however, is not a constant symptom. It is sometimes almost entirely absent, in which case what tympany there is will be seen on the left side and fairly well forward. My experience leads me to the conviction that those cases in which the bowels are free from tympany are the ones that yield most readily to treatment.

When the case has occurred without previous feeding on green food careful enquiries will elicit the fact that the passage of fæces has been fairly regular throughout the day, and that the pains only came on soon after partaking of a particular feed. The most striking and most diagnostic symptom is the frequent eructation of gas, and here one word of caution is necessary. I have called it "eructation" possibly giving my reader to understand that large volumes of gas are escaping by the œsophagus. I need hardly say that such is not the case, for if that

were happened the animal would soon gain natural relief. In the great majority of instances the spasmodic contraction of the cervical muscles, the retching noise emitted by the patient, and the gurgling noises in the œsophagus serve to relieve the patient no further than the expulsion of quite a small quantity of gas, and at times a thin trickling of ingesta from the nostrils.

Should relief not soon be obtained the symptoms become worse still and quickly post on to the end, the breathing becomes more and more distressed, the abdomen fills further and further with gas, and the small quantity of fluid ejected from the nostrils increases in volume until it becomes a disgusting vomit. Saliva hangs in strings from the muzzle, the gurgling noise in the œsophagus becomes louder and more frequent, and is further augmented by the rattling of fluid ingesta that has gained entrance to the trachea ; patchy perspirations bedew the body, and the whole appearance is indicative of the greatest concern and anxiety.

Later the animal becomes pulseless, delirium come on, and he staggers unconsciously round and round his box. Shortly afterwards the poor brute expires in convulsions, in his agony clutching the ground with his teeth as he draws his final gasps. The eyes recede, the limbs stiffen, and the patient slave has finished his toil.

Diagnosis.—When the case is fairly well advanced this should offer no great amount of difficulty. As I have stated before, attacks of tympanitic stomach are somewhat deceiving at the outset, and the very mildness of the early symptoms may lead the veterinarian to look too lightly upon his case. At the most, however, from one to two hours will produce unequivocal symptoms, and the veterinary surgeon is able, with all confidence, to set about treating the case.

The manner in which the diagnosis may be proceeded with is something after this fashion. The veterinarian finds his patient so frantic with pain, so bedewed with sweat, and his pulse so quickened as to immediately suggest that dire disease "enteritis." He is relieved on that score by an examination of the conjunctiva. It is not of the "raw beef," redness so invariably associated with that fell malady. The respiration to his practised ear suggests, in addition to pain, something of suffocating pressure on the diaphragm. While engaged in this the examiner will often hear sounds of peristalsis, with sometimes the passing of a small volume of flatus per anum. He knows, again, that in enteritis these movements and sounds are almost entirely absent. The eye, though expressive of excruciating pain, has not the haggard "I'm done for" kind of expression that the animal in the fatal grip of enteritis always shows.

Having dismissed enteritis from his calculations, the field of error is considerably reduced. The pains are not those of ordinary impaction of the stomach or intestines, they are much too acute in character. Is it twist, volvulus, or strangulated hernia? In a typical case of the affection even these serious sounding suggestions are easily disposed of. The abdomen is not hard enough, tense enough, tympanitic enough to allow of such an idea being seriously entertained for long. It will not be forgotten, however, that, as previously stated, the abdomen *may* be tympanitic, so that to assist him in his diagnosis the veterinarian must look for signs more convincing still ere he comes to a final conclusion.

Perhaps he has punctured the abdomen, and still finds tympany remaining. In the positions in which he has operated he knows he should have encountered the cæcum and colon. He knows of no other bowel that is able to distend to the extent that his case presents. He is compelled, and rightly, to fall back on the stomach as the seat of mischief.

He is struck by the catchy, see-saw breathing, and the trickling fluid, small in quantity, running from the nostrils. He auscultates the trachea and obtains distinct evidence of fluid in that passage. The idea of an inspired drench is emphatically negatived by the owner and attendants ; sometimes even one has not been administered. The balance of evidence, even now inclining heavily towards "stomach trouble," is weightily dropped by the exhibition of a definite and characteristic set of symptoms on the part of the patient. There is an entirely involuntary regurgitation of the œsophagus, with a peculiar gurgling, bubbling noise in the chest, as with a suppressed squeal of pain, and a slight depression of the head the animal exudes a small quantity of ingesta-stained fluid from the nostrils.

The veterinary surgeon knows now he has a case of tympanitic stomach, and that a bad one, on his hands. Should it happen, however, that he is only partly convinced, he will be made more certain still by closely watching the animal's movements. The act of lying down is performed with care, and should his case fortunately be uncomplicated by intestinal tympany, he will notice distinct signs of tympany right forward, under the last rib, on the left side. In addition to this some practitioners have observed that the perspiration is confined to the left side, or more pronounced over the region of the stomach. I cannot say that I have noticed this.

One other symptom, and that a fairly diagnostic one, still remains. When down the animal sometimes raises itself on his fore feet, and sits, dog-like, on his haunches. Mr. Broad, of Bath, has declared that to be almost, if not quite, diagnostic of stomach affection. He says: "Sitting on the haunches has its diagnostic value, it indicates the seat and nature of the pain evinced—that is, over-distension of the stomach and anterior part of colon, or both—the horse taking this position to relieve the diaphragm of their weight and pressure.

With a set of symptoms like the above the veterinary surgeon should have no great difficulty in summing up his case. Even should only one-half of them be exhibited, a right understanding should be arrived at.

Treatment.—The statement of the causes of tympanitic stomach is so apparently simple that the uninitiated may be excused for assuming that the treatment of this condition is easy. We have simply to rid the stomach of gas already there, and then to prevent the formation of any more. On the face of it that direction carries the mark of simplicity. The veterinarian, however, is only too painfully aware of the difficulties attending its accomplishment.

In disposing of the gases already present two mechanical methods at once jump to the mind, viz., the use of a probang or œsophagus tube, the passing of which would enable the gas to be delivered by way of the œsophagus, or the penetrating of the stomach with a trocar and canula.

The merits of the former deserve fuller investigation. The only man who has gone into the matter within recent years, however, leaves the question very greatly undecided. There is no great difficulty in passing the probang in the horse, provided the animal is first properly secured, and I cannot help but think this should be a means of affording relief. We in country practice, however, have this further point to consider. Cases of tympanitic stomach, viewed alongside of other colic troubles, are of comparatively rare occurrence. To be prepared for the case would mean that we should have to carry the tube, necessarily a somewhat cumbersome article, to every case of colic we visited. When I say we should carry the apparatus to 95 or 96 per cent. of colic cases that did not require it, I do not think I should be overstepping the mark. Should some future investigator prove the method to be of undoubted value, then we should have to attempt to surmount that difficulty. At present the œsophagus tube would prove but a useless piece of impedimenta.

The use of the trocar and canula we may dispose of at once by saying that it is dangerous. Some years ago Vet.-Lt.-Col. Smith suggested the following as a suitable

position for the operation—a space between the extremity of the transverse process of the first lumbar vertebra and the last rib on the left side. The trocar would have to be entered in an oblique manner from above downwards, inwards, and to the right, when it would reach the upper portion of the left cul-de-sac.

Though some observers describe the appearance of a marked swelling far forward on the left side of the abdomen—that is near the suggested seat of operation—the horse's stomach as a rule lies too far from our reach to allow of its being penetrated by a trocar with safety. Even should some bold spirit attempt it he would need remember that the trocar would pass dangerously near some most important structures. He would also have to bear in mind that penetration of these structures would be likely unless the stomach distension was extreme.

Our mechanical means of ridding the stomach of gas are, therefore, imperfect. We are compelled to fall back on the exhibition of medicinal agents.

Before attempting to disperse the gases in this way we must first know their composition. Those found most largely in the distended stomach are carbonic acid, carburetted hydrogen, sulphuretted hydrogen, and nitrogen, the nitrogen only forming a small proportion. What drugs will most effectually dispose of these?

To commence with, we may dismiss carburetted hydrogen as beyond our power to deal with, for no vehicle which may be administered by the mouth will conveniently absorb it. Our remedial agents must, therefore, be mainly directed against carbonic acid and sulphuretted hydrogen. Ammonia immediately suggests itself as a suitable treatment. Its success, however, will entirely depend upon what form of ammonia is used.

A large dose of the carbonate would prove well-nigh fatal. It is in this way. In a case of gastric tympany we may be pretty safe in assuming that we have an acid condition of the stomach contents. The action of the acid on the administered carbonate would cause the evolution of carbonic acid, thus adding still further to the volume of that gas already present.

The form of ammonia indicated is the solution of ammonium hydrate (the liquor ammoniæ fort. of the pharmacopœias), because by its exhibition the carbonic acid gas present in the stomach will readily be absorbed (to form ammonium carbonate) while, with a suitable addition (as, for example, iron or bismuth) the sulphuretted hydrogen may also be combined, and caused to leave its gaseous form, thus greatly lessening the volume of gases in the stomach. Such an admixture is easily prepared as follows:—

Ferri sulph. pulv.	℥i.
Aqua (fervens)	Oii.
Liq. Ammon. fort.	℥iv.

This mixture, with its resulting precipitate, should be administered at once. The freshly precipitated hydrate of iron combines with the sulphuretted hydrogen, while the free ammonia, still exerting its stimulant and antispasmodic actions, absorbs the carbonic acid.

One word is necessary to explain the apparently excessive dose of liq. ammon. fort. An estimated three drachms of that goes to the formation of hydrate of iron, thus leaving really only one drachm of free ammonia for other purposes.

This is the treatment I would recommend as the most suitable for disposing of the accumulated stomach gases. To be quite frank, I have so far only been able to try it on two well-marked cases, each time with good results. It is not proved to be *the* correct treatment. The experience of my two cases, however, shows it to be worth a further trial, and I think I am safe in saying we have nothing better to offer in its place. Should any of you hereafter feel inclined to test its value I shall be pleased to be made acquainted with your results.

Having disposed of the gases already present in the stomach we have then to prevent their further formation. This duty is easier than the first, for we have read to hand a comprehensive list of drugs any one of which will answer our purpose, the only difficulty being to select the most suitable. Balls containing boracic acid, hyposulphite of soda, or oil of tar, draughts of terebene, ol. tereb., carbolic acid, lysol, Jeyes', or water stongly impregnated with ol. menth. pip. all are useful. It is well, when possible, to select one that has the additional advantage of being a stimulant, in which case the old-fashioned remedy turpentine will come prominently to the front. A suitable would be as this:—

℞ Ol. Tereb. (or Terebene Pur.)	℥ii.
Ol. Menth. Pip.	℥ss.
Ol. Lini. ad.	Oi.

Misce fiat haust.

Sig.—To be given in a pint of new milk or thick linseed gruel, and repeated in an hour if necessary.

In addition to the treatment here advised there is another means of affording relief that a due consideration of the causes of the complaint will have led us to. I am alluding to the forcing of the gases through the pylorus. It is fairly evident, unless they are already distended, the horse's voluminous intestines should be well able to carry off all the gas that might be formed in his stomach. This brings me to a consideration of the use of sedatives when treating this disorder.

We have already seen that it is only when the duodenal S-Trap is imprisoned between the stomach and a distended coil of intestine that the pyloric end of the stomach is locked. It follows naturally that an empty and active state of the intestines is imperative if escape of the gas is to be looked for by that road. How can this empty and active state of the intestines be best maintained? Certainly not by the administration of anodynes. If we are ill-advised enough in a case of tympanitic stomach to give a sedative, if, further, our choice is so careless a one as to lead us to the selection of morphia, we are actively assisting in staying peristalsis and producing tympany—courting the existence of the very state of affairs we should be endeavouring to resist.

The case stands thus. We have a horse with his stomach enormously distended with gas. In all probability its distension is materially aiding in the closure of the duodenal S-trap. I have already shown that the horse is unable to relieve himself by way of the œsophagus. *Ergo*—the only natural relief we can possibly hope for is the unlocking of the duodenal S-trap by violent and energetic intestinal movements. These movements we propose to hinder by a dose of morphia or opium.

Gentlemen, is that treatment logical? Personally I should say not. A far more rational procedure would be to administer such agents as would increase intestinal movements and allow the imprisoned gases to escape by the pylorus. Consequently, no matter what the pain has been, and in addition to any treatment I have adopted with the stomach itself, it has been my own practice to exhibit a hypodermic dose of eserine. It is often immediately followed by the happiest results.

I have explained to you that we meet with distended stomach in two distinct forms: one in which we have also tympanitic intestines, and another in which we have *not*. In the former case the beneficial action of a dose of eserine is so very apparent that the practitioner who has once seen its results will never again be tempted to withhold it administration.

It goes without saying that the intestines, when tympanitic, should be tapped in the region of the flanks. That is, in fact, sometimes the readiest means of restarting peristalsis and affording relief. It is easy to accomplish and unattended with danger. Very often nothing more is really necessary. The liberation of the last portions of the intestinal tube is soon followed

by active movements of the small intestines. The duodenal S-trap is unlocked, and the stomach gases poured into the intestines. Instant relief is thereby afforded, and the animal makes a rapid recovery.

This, gentlemen, concludes my few remarks on this troublesome disorder. I have endeavoured to put it before you in an original manner, and hope that it will be productive of a sprited discussion.

Mr. Gooch proposed a hearty vote of thanks to Mr. Reeks for his admirable paper, remarking that it was impossible to engage in any discussion on such a scientific paper until they had very carefully considered it.

Mr. J. Smith seconded the vote of thanks, and thought it would be the best thing they could do to postpone the discussion until their next meeting, for there were so many important questions raised by such a scientific paper.

Mr. Mason supported the vote of thanks, and the discussion was adjourned until the next meeting to be held at Peterboro'.

The members afterwards dined together at the Angel Hotel, when the usual loyal toasts were honoured.

SALFORD (PARASITIC MANGE) ORDER OF 1903.

The Board of Agriculture, by virtue and in exercise of the powers in them vested under the Diseases of Animals Acts, 1894 and 1896, and of every other power enabling them in this behalf, do order, and it is hereby ordered, as follows :

Separation of Diseased and Suspected Animals and Notice of Disease.

1.—(1) Every person having in his possession or under his charge a horse, ass, or mule affected with or suspected of parasitic mange shall (*a*) as far as practicable keep that animal separate from animals not so affected or suspected : and (*b*) with all practicable speed give notice of the fact of the horse, ass, or mule being so affected or suspected to a constable of the police force for the police area in which the horse, ass, or mule so affected or suspected is.

(2). The constable receiving such notice shall forthwith give information of the receipt by him of the notice to an Inspector of the Local Authority, who shall forthwith report the same to the Local Authority.

Duty of Inspector to act immediately.

2. An Inspector of the Local Authority on receiving in any manner whatsoever information of the supposed existence of parasitic mange, or having reasonable ground to suspect the existence of parasitic mange, shall proceed with all practicable speed to the place where such disease, according to the information received by him, exists, or is suspected to exist, and shall see that the provisions of this Order are complied with.

Treatment for Parasitic Mange.

3.—(1) A person having in his possession or under his charge a horse, ass, or mule affected with parasitic mange shall from time to time as often as may be necessary treat that horse, ass, or mule, or cause it to be treated, with some dressing or other remedy for parasitic mange.

Regulations of Local Authority as to Cleansing and Disinfection.

4.—(1) The Local Authority may, for the purpose of preventing the spreading of parasitic mange, make Regulations for the following purposes, or any of them :

(*a*) For providing for the cleansing and disinfection of any place used by, and of utensils, mangers, feeding-troughs, pens, hurdles, harness, or other things used for or about, any horse, ass, or mule affected with or suspected of parasitic mange :

(*b*) For prescribing the mode in which such cleansing and disinfection are to be effected :

(*c*) For requiring the owner, lessee, or occupier of any such place to cleanse and disinfect any such place, utensils, mangers, feeding-troughs, pens, hurdles, harness, or other things, at the expense of the Local Authority, or at the expense of such owner, lessee, or occupier.

(2). If any person fail to cleanse and disinfect any place or any utensil, manger, feeding-trough, pen, hurdle, harness, or other thing, in accordance with any such Regulation, it shall be lawful for the Local Authority, without prejudice to the recovery of any penalty for the infringement of such Regulation, to cause such place or such utensil, manger, feeding-trough, pen, hurdle, harness, or other thing, to be cleansed and disinfected, and to recover summarily the expenses of such cleansing and disinfection from such person.

(3). If anything is omitted to be done as regards cleansing or disinfection in contravention of a Regulation of the Local Authority made under this Order, the owner and the lessee and the occupier of any place in or in respect of which the same is omitted, shall, each according to and in respect of his own acts and defaults, be deemed guilty of an offence against the Act of 1894.

Occupiers to give facilities for Cleansing.

5.—(1) Where the power of causing any place to be cleansed and disinfected under this Order is exercised by the Local Authority, the owner, lessee, or occupier thereof shall give all reasonable facilities for that purpose.

Extent.

10. This Order extends to the county borough of Salford only.

Commencement.

11. This Order shall come into operation on the twenty-seventh day of February, one thousand nine hundred and three.

Report of an Investigation into the Milk of Tuberculous Cows for the University of Aberdeen.

By J. M'Lauchlan Young, F.R.C.V.S., F.R.S.E., Lecturer on Veterinary Hygiene.

Milk from Tuberculous Cows.

Three years ago the Directors of the Highland and Agricultural Society arranged to carry out investigations into the virulence of milk drawn from cows which had reacted to the tuberculin test. The work was placed in the hands of Principal Williams, the Veterinary Adviser of the Society, but unfortunately the lamented death of that eminent veterinarian took place before the investigations were well begun. At that time, under the joint auspices of the Agricultural Department of the Aberdeen University, and of the Highland and Agricultural Society, I happened to be conducting a supplementary investigation into the value of tuberculin as a diagnostic, and it was thought that the two inquiries could with advantage be carried out simultaneously. The work begun by the late Principal Williams was thus remitted to the Agricultural Department of the Aberdeen University for completion by me, and I now beg leave to submit the following report.

At first I thought suitable material could be obtained in the various cowsheds in the district, and I approached the Town Council of Aberdeen for permission to visit

the cowsheds under its jurisdiction. Permission was granted, but I soon found it would be impossible to obtain such information as was required from this source. If a dairy cow were found to react to the tuberculin test, she could not be immediately slaughtered, so that there would have been no means of ascertaining the extent of the tubercular lesions existing at the time the milk was submitted for examination. Owing to the time that must elapse between the examination of the milk and the *post mortem* examination of the cow, some of the lesions actually found might not have existed when the milk was drawn. Further, it was particularly desired that the condition of the udder should be ascertained and recorded, which necessitated immediate slaughter. Accordingly arrangmeents were made whereby I was allowed to examine cows that were about to be slaughtered. Many such animals were tested, and a certain proportion of them reacted to the tuberculin test, but only a limited number of these happened to be in milk. From a still smaller number could milk of normal appearance be obtained, so that considerable difficulty was experienced in procuring suitable subjects. When, however, a cow was found to react to the test and to yield milk of normal appearance, a sample of about two ounces was drawn off into a sterilised glass bottle and immediately submitted to Professor Hamilton for bacteriological examination. More samples than are indicated by the number of cases shown in the appended tables were thus submitted for examination, but owing to the death of several guinea-pigs from various causes the number of conclusive cases has been reduced to eighteen, particulars of which will be found in the following tables.

It will be noticed that, while seventeen of the cows reacted to the tuberculin test, tubercular lesions were found in eighteen. Number 10, which failed to react, was a blue polled cow about nine years of age that showed all the clinical symptoms of tuberculosis. Because of her appearance, although she failed to react to the test, I drew for examination a sample of milk, of which she had a plentiful supply; and it was fortunate I did so, because on *post-mortem* examination she proved to have tubercular affections not only in the lungs, pleura, and mesenteric glands, but also in the udder. Although her appearance was strongly suspicious of tuberculosis, manipulation of the udder had failed to detect any lesions there. On the other hand, in Number 12 the affection was well developed, implicating almost an entire hind quarter of the udder, and on manipulation could easily be felt.

Altogether four cases of tubercular mammitis were demonstrated; but these figures must not be taken as affording any indication of the frequency with which tubercular disease of the udder usually occurs, as some sixty cows were examined, and the whole of these had been carefully selected because they appeared to be more or less suitable for the purpose of this investigation. For the same reason the percentage of udder affection shown herein is abnormally high.

From Professor Hamilton's report appended hereto it will be seen that the milk from the four udder cases when inoculated into guinea-pigs produced typical tubercular lesions, while the milk from the fourteen remaining cases had no such effect. The table of *post mortem* results shows that tuberculosis was found extensively in some of the animals whose milk failed to produce any effect when inoculated into guinea-pigs.

Upon the whole matter I draw the following conclusions:—

1. Milk drawn from cows suffering from tuberculosis of parts other than the mammary gland possesses no virulence, and is incapable of reproducing the disease when inoculated into guinea-pigs.
2. Milk drawn from cows suffering from tuberculosis of the mammary gland in all cases reproduces the disease when inoculated into guinea-pigs, and in some cases possesses a remarkable virulence.

I regret that it was found impossible to deal with a larger number of cases, as was originally intended, but there is no reason to suppose that if this had been done the results would have been materially different.

CONSPECTUS OF POST-MORTEM RESULTS.

Cow No	Lungs.	Bronchial Glands.	Mesenteric Glands.	Pleura.	Mediastinal Glands.	Liver.	Diaphragm.	Peritoneum.	Pharyngeal Glands.	Spleen.	Udder.
1	a	a			a						
2	a	a			a						
3	a	a	a								
4	a	a	a	a	a						a
5	a	a		a							
6	a	a		a			a	a			
7	a	a		a							
8		a	a			a					
9		a	a								
10	a		a	a					a		a
11	a	a	a	a				a			a
12	a					a					a
13	a	a							a		
14		a	a		a						
15		a	a		a	a				a	
16	a			a		a	a				
17	a										
18			a	a			a	a			
Total	13	13	9	8	5	4	3	3½	2	1	4

a = affected.

BACTERIOLOGICAL REPORT.

By Professor HAMILTON, University of Aberdeen.

TECHNIQUE.

About 10 c.c. of the sample submitted was drawn off into a sterile centrifuge tube, and centrifugalised for three or four minutes until the sediment was well deposited. The deposit with part of the milk was then drawn into a sterile syringe, and introduced into the groins of two guinea-pigs. The deposit was, in all cases, examined by means of film preparations for Tubercle Bacillus.

LESIONS.

The lesions observed in the guinea-pigs were all examined and tested for Tubercle Bacillus by the usual methods.

NUMBER OF CASES.

In all, eighteen tests were fully carried out.

SUMMARY.

In fourteen cases the guinea-pigs did not show lesions observed in cases of tubercular diseases.

In four cases tubercular lesions were observed in the guinea-pigs, macroscopically and microscopically.

DISEASES OF ANIMALS ACTS 1894 & 1896.

Summary of Returns, Week Ending February 28, 1903.

Period.	Anthrax.		Foot-and-Mouth Disease.		Glanders (including Farcy)		Rabies.		Swine Fever.	
							Cases Confirmed.			
	Outbreaks.	Animals Attacked.	Outbreaks.	Animals Attacked.	Outbreaks.	Animals Attacked.	Dogs.	Other Animals	Outbreaks.	Slaughtered as Diseased or Exposed to Infection
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Week ended February 28, 1903 ..	18	32	..	..	23	44	..	..	26	67
Corresponding week in 1902 ..	13	16	..	..	18	30	..	..	23	142
Corresponding week in 1901 ..	14	24	..	76	30	48	..	..	48	195
Corresponding week in 1900 ..	7	9	..	..	14	22	..	..	31	307
Total for 9 weeks, 1903	146	222	..	..	200	374	..	..	248	1,072
Corresponding period in 1902 ..	145	240	..	..	193	382	3	..	290	1,713
Corresponding period in 1901 ..	111	164	9	647	225	426	..	1	339	1,747
Corresponding period in 1900 ..	90	138	7	99	172	326	..	..	318	3,512

Note.—The figures for the Current Year are approximate only.

Board of Agriculture, March 3, 1903.

SHEEP SCAB.

The Board of Agriculture has issued the following as a leaflet:

"Sheep-scab may be described as a parasitic rather than as a purely contagious disease, affecting the woolly parts of the body, and due to the presence on the skin of a species of mite or acarus known scientifically as *Dermatodectes ovis*, or *Psoroptes communis*.

Identification.—The mature acarus or mite that causes scab in sheep is white, 1-40 to 1-50 of an inch (·52—·62 mm.) in length, the female being somewhat larger than the male. The egg is about 1-125 of an inch (·2 mm.) long. The immature insects have only three pairs of legs, but when full grown, and capable of reproduction, they are provided with four pairs. Each foot of the first three pairs of legs of the male is furnished with a sucker disc; but in the case of the female this disc on the third pair of feet is replaced by long hairs

Parasites very similar in form and size are also found on the horse, dog, and other animals, producing the disease commonly called mange, but the mange mite does not produce sheep-scab. It may therefore be accepted that where sheep become affected with sheep-scab they must have previously been in contact with diseased sheep, or with fences, posts, hurdles, or other objects against which diseased animals have rubbed.

Symptoms of Attack.—One of the first symptoms apparent in a sheep that has contracted scab is restlessness on the part of the animal, and a desire to bite the affected part, or rub against posts, fences, or hurdles, or even against other members of the flock. This restlessness is the result of the irritation produced by the mites pricking the skin of the sheep in their endeavour to obtain food, and as they increase in number, the constant biting and rubbing of the sheep to allay the irritation causes injury to the skin, which is followed by an exudation of serum, and the formation of crusts or scabs, under the edge of which the parasites and their ova are to be found.

As the mites increase in numbers they move from beneath the scabs to the more healthy parts of the skin and thus extend the area of the disease.

The injury to the skin produced by these mites is followed by shedding of the wool, and the fleece becomes broken and tufted, or matted together, giving the animal a ragged appearance. Even where the wool does not detach itself from the skin, it assumes a dead white bleached appearance.

As soon as a sheep is found to present the above symptoms the owner should at once examine the animal, and, if he has any doubt as to the nature of the disease, call in the assistance of his veterinary adviser to discover whether the itching and rubbing are due to the presence of the sheep-scab mite, or other causes.

The most convenient method of examining a piece of wool or crust taken from a suspected case of scab is to spread it out upon a dark surface, and place it in the sun or an other warm position, when the mites will be seen as small white specks moving about on the wool or perhaps on the surface beneath it. These moving objects should then be examined with a pocket lens or with a microscope of low power, when the parasites and their eggs will be seen.

The parasites and their eggs are usually abundant in the crusts or scabs on the surface of the skin, and if a small portion of the crust and wool, after being softened in a mixture composed of glycerine and a solution of potash or soda, is teased out and placed upon a microscope slide there will often be found, in confirmed cases of scab, whole mites, or portions of the detached legs, and eggs mixed up with the fibres of the wool and fatty matter.

It has been stated that the parasites of sheep-scab may be easily seen by the naked eye (but examination is greatly facilitated by the use of a pocket lens, or a low-power microscope), and now that the decisions of the Veterinary Inspectors of Local Authorities in Great Britain are followed by serious consequences to the owners if sheep are certified to be affected with scab, it is most important that no errors should be made in diagnosis. It therefore becomes necessary that all enquiries into reported outbreaks should be conducted on the above lines and with due care, because unless the particular mite can be discovered, the disease cannot properly be declared to be present.

Life History.—Since the life history of the sheep-scab

parasite has a very important practical bearing upon that part of the Sheep-Scab Order of 1898, which deals with the dipping of sheep, it should be explained that after the parasite has been transferred from the diseased to the healthy sheep the female lays its eggs and dies. These eggs under favourable circumstances are hatched in about seven days, and the young female parasites, after undergoing the various stages of their development, arrive at maturity in about two weeks, when they, in their turn, proceed to lay eggs.

In all instances where sheep exhibit manifest evidence of scab, the wool contains not only living parasites but also eggs which may be newly laid, or on the point of hatching. While therefore one dipping, properly conducted, will have the effect of killing the living mites and destroying some of the eggs, it is absolutely necessary, if a perfect cure is to be established, to have recourse to a second dipping, which should be carried out not earlier than the 10th, not later than the 14th days. If the dipping has been done with proper materials, two dippings will suffice, but if any doubt exists, a third dipping after a similar interval should be undertaken.

Preventive Measures.—Needless to say dipping will not be effective unless proper materials be used, and not only so, but the operation must be carried out in a thorough manner. The substances most commonly employed to kill the scab-mite are preparations of white arsenic, carbolic acid, tobacco juice or sulphur. Some flock masters compound home made dips, but most rely upon one or other of the many patent dips that are now upon the market, fortified, in some cases, by the addition of one gallon of tobacco juice for score of sheep. For the object in view they are not all alike serviceable, so that care should be given to the selection of one that is known to be effective.

Of the two forms of bath—hand and swimming—the latter is greatly to be preferred. The advantages of the swimming bath are: (1) The sheep, being in a natural position, may be completely immersed, even in a poisonous solution, with comparatively little danger; (2) sheep in lamb may be dipped with much less risk; (3) the motion of swimming allows no portion of the fleece to escape contact with the solution; (4) the work is more easily and therefore more effectively performed; (5) a larger number of sheep can be dipped in a given time and with fewer hands.

The length of the time of immersion depends on the state of the fleece, and, to some extent, on the strength of the dip, but with proper materials one minute is sufficient.

On pastoral hills, or where the boundary fences are defective, it is difficult, if not impossible, to prevent a certain amount of mixing between sheep belonging to adjacent owners, and it is no easy matter to ward off the risk of attack. On commons the danger of contamination of the flock is still greater. But, with ordinary precautions, scab should be impossible of introduction to a well-fenced farm. These precautions consist in using reasonable care in the purchase of sheep, and in making a point of never bringing fresh sheep on to the ground without first putting them through the dipper. And if sheep are exposed at a market, without effecting a sale, the animals should be dipped before being returned to their grazings and mixed with other sheep. These are safe precautions under any circumstances, and especially so in scab-infected districts.

4, Whitehall Place, London, S.W.
November, 1899.
Revised November, 1902.

Copies of this leaflet may be obtained free of charge and post free on application to the Secretary, Board of Agriculture, 4, Whitehall Place, London, S.W. Letters of application so addressed need not be stamped.

Registration of Stallions in Devonshire.

At a meeting on the 27th February, of the Devonshire Agricultural Association at Exeter, Mr. Scott-Browne moved the appointment of a committee to consider the question of the registration of stallions now travelling in Devonshire. He proposed that the Council should write the secretaries of the local shows asking them whether they could arrange to have all their stallions brought together on a certain date, probably the first or second week in April. They could then employ a man of world wide reputation as veterinary surgeon to come down and visit that centre. All horses which passed as being free from hereditary disease could be placed on a County Register. A small registration fee could be charged to meet expenses. The scheme would not cost the Society a single penny. If they obtained such a Register he believed that they would drive all the unsound horses out of the county.—Colonel Byng seconded.—Mr. H. Drew favoured the proposal, which was agreed on, and the committee appointed.

Ringworm of the Cat Infecting Children.

Dr. Leslie Roberts read a note on an example of trichophyton in the cat. The animal was infected in Egypt; twenty days after leaving that country the cat was taken to a house in Cheshire where there was a large family of children. A few days later ringworm was observed on the neck of the eldest daughter; within a month fourteen individuals were accidentally infected with the fungus, in addition to a kitten and a Skye terrier. The infection was subsequently communicated to a school.—*B.M.J.*

Marriage.

Tucker—Bell.—On the 18th February, at St. Martin's Church, Brampton, Cumberland, by the Rev. W. Bell, M.A., uncle of the bride, assisted by the Rev. T. Armstrong, vicar, Frederick John Tucker, M.R.C.V.S., Lond., of Monmouth, only son of the late William Tucker, of Abergavenny, to Jenny, only daughter of the late Thomas Bell, Tarn House, and Mrs. Bell, Milton Villas, Brampton.

ARMY VETERINARY DEPARTMENT.

Extract from *London Gazette*:

War Office, Pall Mall, March 3rd.

Indian Army.—Vet.-Lieut. T. W. Rudd to be Veterinary-Captain.

OBITUARY

Elvin Plant, M.R.C.V.S., Middlewich, Cheshire.
Graduated, New Edin: 1894.

A great sensation was caused not only in Middlewich, but throughout Mid-Cheshire, on Saturday morning by the death under tragic circumstances of Mr. Elvin Plant, a well known gentleman in Middlewich and district. It appears that he seemed to be in his usual good health about nine o'clock on Friday night. Shortly afterwards, however, he was taken ill, and Dr. Mitchell was summoned. The symptoms led him to believe that Mr. Plant was suffering from the effects of some poison. He used every effort to counteract it, but Mr. Plant died before midnight. Mr. Plant is the son of Mr. Thomas Plant, Holmes Chapel. He started in Middlewich about four years ago, and had built up a large practice. He was a member of a Masonic lodge in Scotland.—*Liverpool Mercury.*

An inquest was held at Middlewich on Monday, March 2nd. Deceased was frequently prescribed morphia, and on Friday night took an overdose of chlorodyne to procure sleep. Dr. Mitchell injected strychnine, but deceased died without regaining consciousness two hours later. Verdict: Death from misadventure. Deceased was County veterinary surgeon.

CORRESPONDENCE.

THE A.V.D. AND COL. LONG.

Sir,

Correspondents who shelter themselves behind anonymity are scarcely worth one's powder and shot, and especially despicable does their conduct become when (like V.S. in your issue of February 7th, and "Another V.S." in your issue of February 14th) they cowardly hide behind *noms de plume* to attack—with misleading statements and subtle insinuations, members of our profession, and especially the military members of our profession, who are debarred—by the rules and custom of the service—from replying.

However. I am a civilian and not a member of the A.V.D., so a similar disability does not lie on me, so I trust, Mr. Editor, that you will give me space to say something on the other side, for "Fair play is a jewel" and you, sir, on February 14th treated your readers to a leaderette on the above subject. which is—to say the least of it—absolutely incorrect.

You say "No one paid any attention to the requests of a veterinary officer . . . . . They were ignored." This is distinctly wrong, as I know from personal experience, and will—if you give me space—prove from facts within my own knowledge, for I saw, as a civilian veterinary surgeon, considerable service with the A.V.D. in South Africa during the war. For over five months I was in veterinary charge of the enormous Remount Depôt at De Aar, on two occasions acting as officer in command of the depôt, when there was no executive officer there. Whilst I was there the whole of the De Aar District (some eight thousand square miles) was cleared of horses and mules under Gen. French's proclamation, and all the animals—many thousands in number—passed through my hands at the depôt. When I went to De Aar the depot consisted of seven kraals, *i.e.* yards or compounds, but it was more than double the size before I left, so I know whereof I write, and it will be seen that my requirements were very considerable; and I assert that whenever I, as a veterinary officer, asked for anything or recommended anything my desires were promptly complied with.

The Royal Engineers, the Army Service Corps, and the Ordnance Department were always most helpful. At all times they were ready to do and willing to supply whatever I needed. The District Commandant (Major Parsons) invariably approved of my suggestions, and the General Officer Commanding the Western District (Sir Hy. Settle) more than once complimented the staff of the Depot on the orderly, clean, and smart condition of the Depot.

We had mangers in every kraal, and we had water troughs, with water laid on, in every kraal. As horse rations we had oats, linseed, bran, linseed cake, mealies, hay, and "oat hay," a variety of food as good as can be found in many English stables, and yet we were in a country in a state of war, five hundred miles from the coast, which means a good deal when the transport of all our fodder is considered.

The Royal Engineers erected for the Depot whilst I was there an immense building as a forage barn, and there was also a good building for office purposes.

Again, at the Remount Depot at Stellenbosch, where Captain A. England, of the A.V.D., was in veterinary charge, and where I was stationed for about ten days, there was good stabling for horses and mules, buildings for offices, pharmacy etc., to say nothing of two or three very large baths, deep enough for horses to float in, used in the treatment of skin diseases. There were also mangers and water troughs.

Again, whilst I was at De Aar, a model Field Veterinary Hospital was started there by Lieut.-Colonel Fred. Smith, A.V.D., and placed under the charge of a civilian veterinary surgeon—James Irvine Smith—who is now, I believe, the holder of a commission in the South African Constabulary. This hospital was splendidly equipped with stabling, buildings for pharmacy, and office, a horse bath similar to those at Stellenbosch, mangers, water-troughs, etc; in fact, it had good accommodation for over a thousand sick horses. Moreover, this hospital was used as an advanced Base Veterinary Depôt. There was a large, well-furnished building used as a store for enormous quantities of drugs and instruments, which were despatched therefrom to all parts of South Africa as required.

When I left De Aar, I was sent to Rinderpest (cattle-plague) duty, and here, again, all my requirements were immediately complied with. In Kimberley, where there was a very serious outbreak of the disease (eight thousand animals on one farm alone being affected, to say nothing of other neighbouring outbreaks), a large number of syringes were required for intravenous and subcutaneous protective inoculation; and I also needed many other articles for use in the preparation of the material used for the inoculations. In order to avoid the delay (three or four days) which would have been involved in waiting for all these things to arrive from the Base Stores at Capetown, the General Officer commanding the Kimberley district gave me *carte blanche* and authorized me to purchase locally, at Imperial expense, anything which I needed, and I spent a considerable sum of money in this way.

Whilst I was in Kimberley the D.A.A.G.T. (Western line of Communication), the A.A.G.B., the Government Inspector of Farms, the Assistant Provost Marshal, and other military officials, were frequently seeking suggestions, recommendations, and advice from me, so veterinary officers were not always "ignored" as you state, nor are you correct in saying "No one paid any regard to the requests of a veterinary officer."

In Kimberley there was also a Field Veterinary Hospital well equipped with stabling, mangers, water-troughs, foot bath for horses, buildings for pharmacy, and office, etc., and a large horse bath for the treatment of skin disease (similar to those at De Aar and Stellenbosch) was in process of formation when I left. This excellent little hospital was under the charge of Civilian Veterinary Surgeon Joseph Buck, and the regard in which this gentleman and his work were held is evinced by the fact that he had the high honour of being mentioned in despatches by the Commander-in-Chief, S. Africa—General Lord Kitchener.

I regret that I cannot say anything about the state of affairs in other parts of South Africa. I wish to avoid repeating hearsay statements, and I prefer to speak only of what I actually saw myself, and of circumstances which came within my own personal knowledge. This is exactly what I have done; and I returned to England from South Africa in the early days of February, 1902. The oft-criticised appointment of Colonel Long did not take place until after that, so it will be seen how groundless are the statements and insinuations of the anonymous correspondents to whom I have alluded, and how incorrect is your leading article.

The Principal Veterinary Officer in South Africa whom your correspondents mention (although one of them admits that he does not even know the officer's name) was Colonel Iles Matthews, A.V.D., and the fact thet he is being sent to India as Principal Veterinary Surgeon in that country is sufficient indication of the high value placed on his services; and Lieut.-Colonel Fred. Smith, who was Senior Veterinary Officer in Cape Colony whilst I was out there, is having his work and services recognised and rewarded by promotion to the position of Principal Veterinary Surgeon in South Africa, in succession to Colonel Matthews.

EDWARD REUBEN EDWARDS, M.R.C.V.S.
96 Blackstock Road, London, N.
February 28, 1903.

THE PROBANG IN CHOKING.

Sir,

Mr. Parker asks in this week's *Record* "whether it is always good policy to pass a probang and forcibly remove a foreign body in case of choking." There is decided danger if tympany exists and the animal at all troublesome. In such a case always tap first. There is never any hurry to use the probang. In addition to the spasm of the œsophagus usually present directly after choking, tympany places the gullet on the stretch and still further reduces its calibre. The use of the gag in choking is founded on a similar principle—it relaxes the longitudinal fibre of the gullet. The tendency to the formation of gas is greatest during the first few minutes of choking. I am speaking of course of cattle. I believe rupture of the œsophagus sometimes takes place in choking, when accompanied by extreme tympany apart from mechanical interference.

F. T. HARVEY.